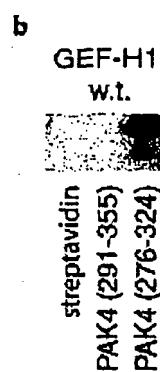
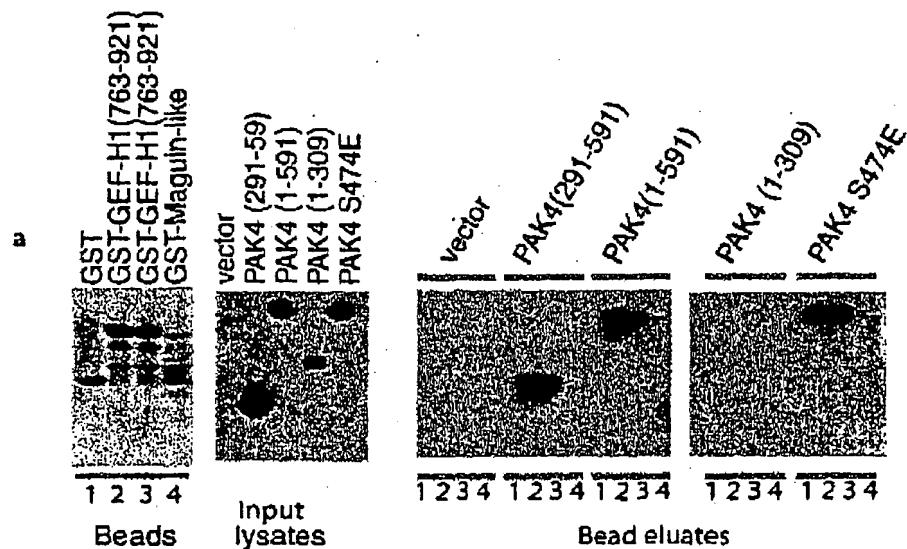
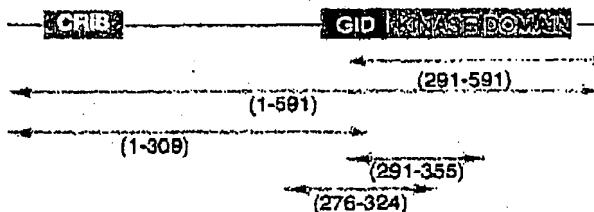


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**c PAK4**

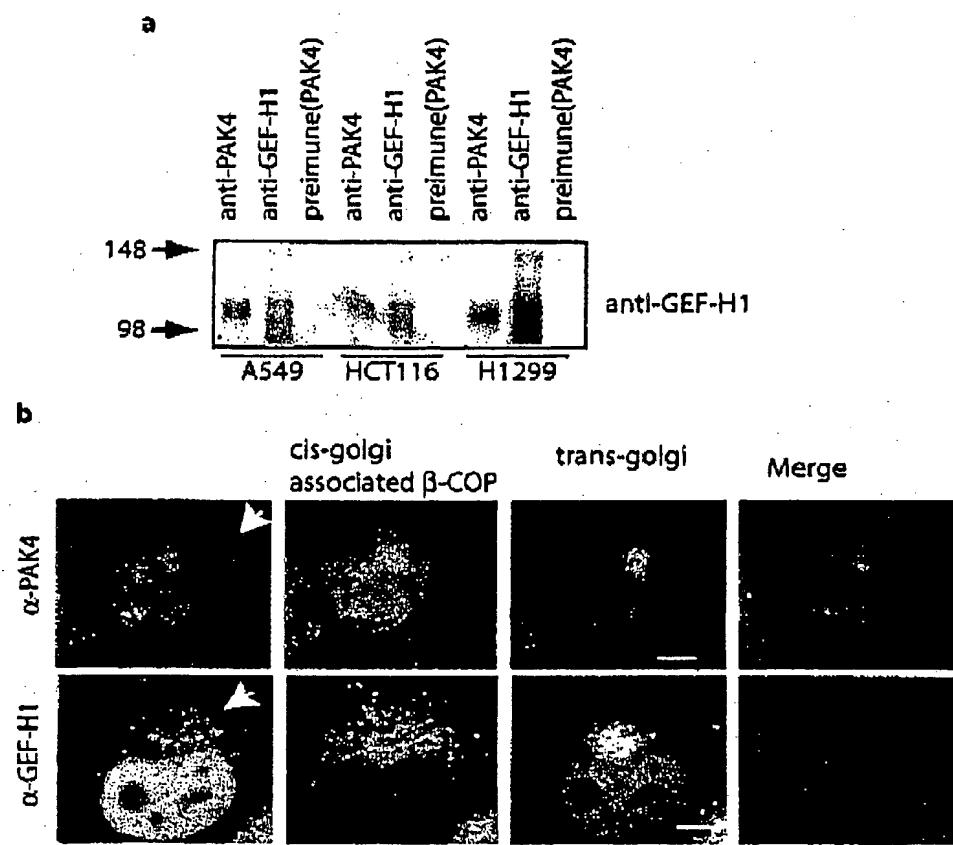


**d GID (GEF INTERACTION DOMAIN)**

276 C-----TPAABAVEGPPPGPRSPQREFORVSRTEOFRAALOLVVDGCDPERSYLDNE 324 PAK4  
399 SYLSSSISLSSSTYLPESWGSSSDQQPSRVSHICFRAAOLOLVVSQCDPREGYHANFIK 454 PAK5  
359 ISTSNEYE--EQDESTVAKGALAGEDTGVVVIEGKKAALRMVWDQGDEDRILLIDSYVK 412 PAK6

Fig 1. In vitro association of GEF-H1 with PAK4 alleles and subdomains.

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**Fig. 2. PAK4 and GEF-H1 co-associate.**

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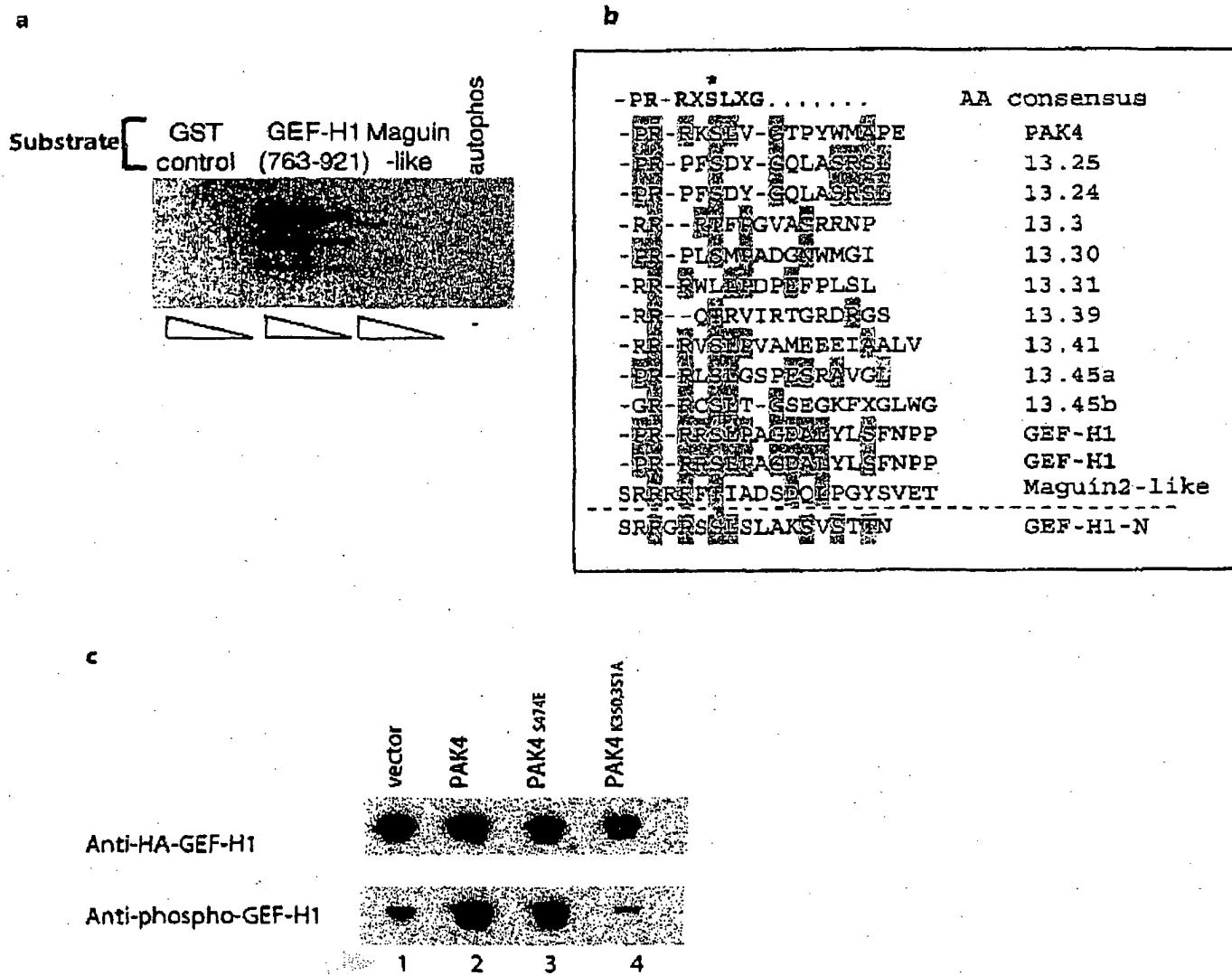


Fig. 3. PAK4 phosphorylates GEF-H1 in vitro and in vivo.

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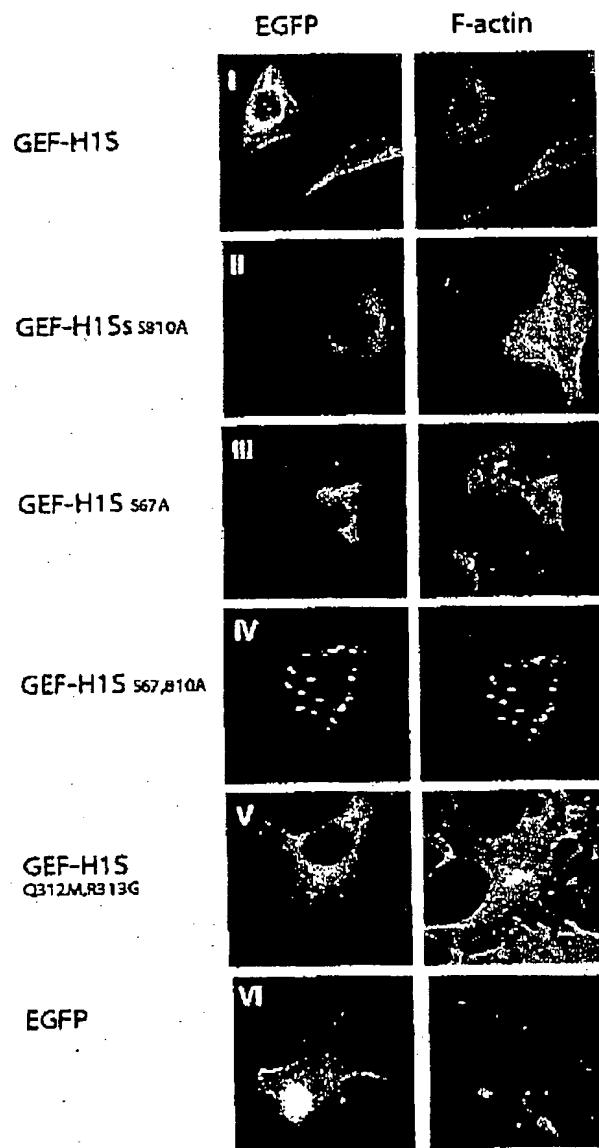
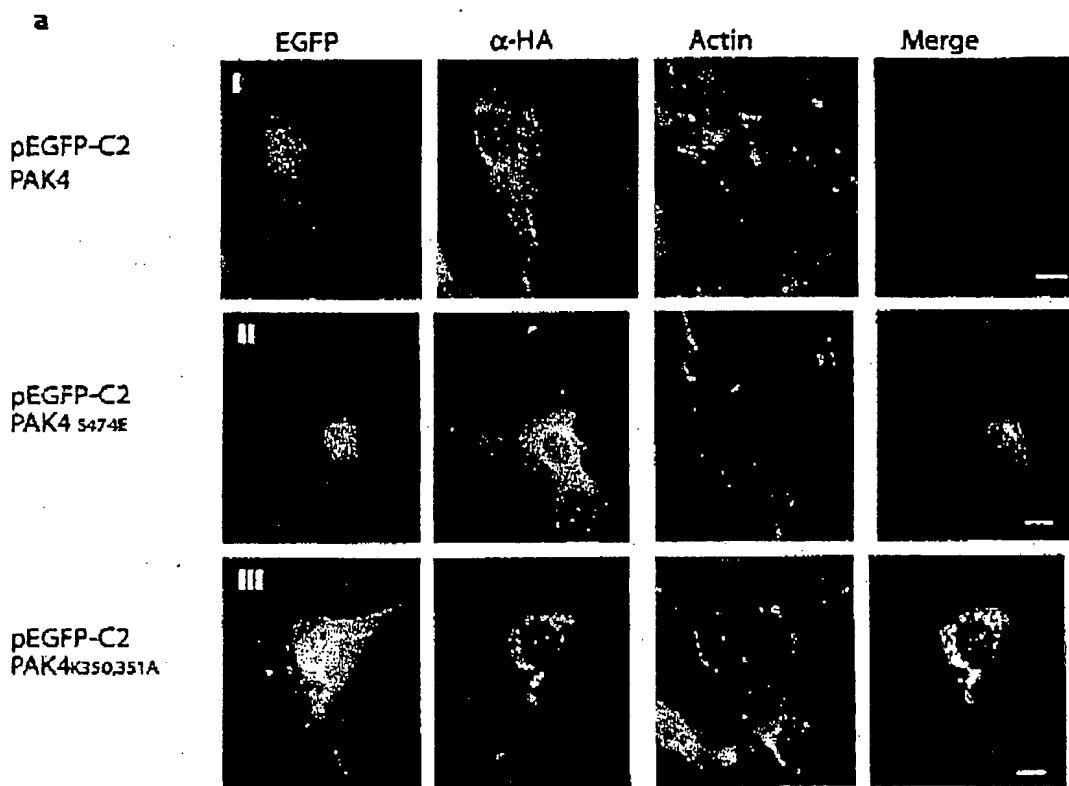


Fig 4. Morphological effects of GEF-H1 alleles.

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**Fig 5a. PAK4 effects on the actin cytoskeleton**

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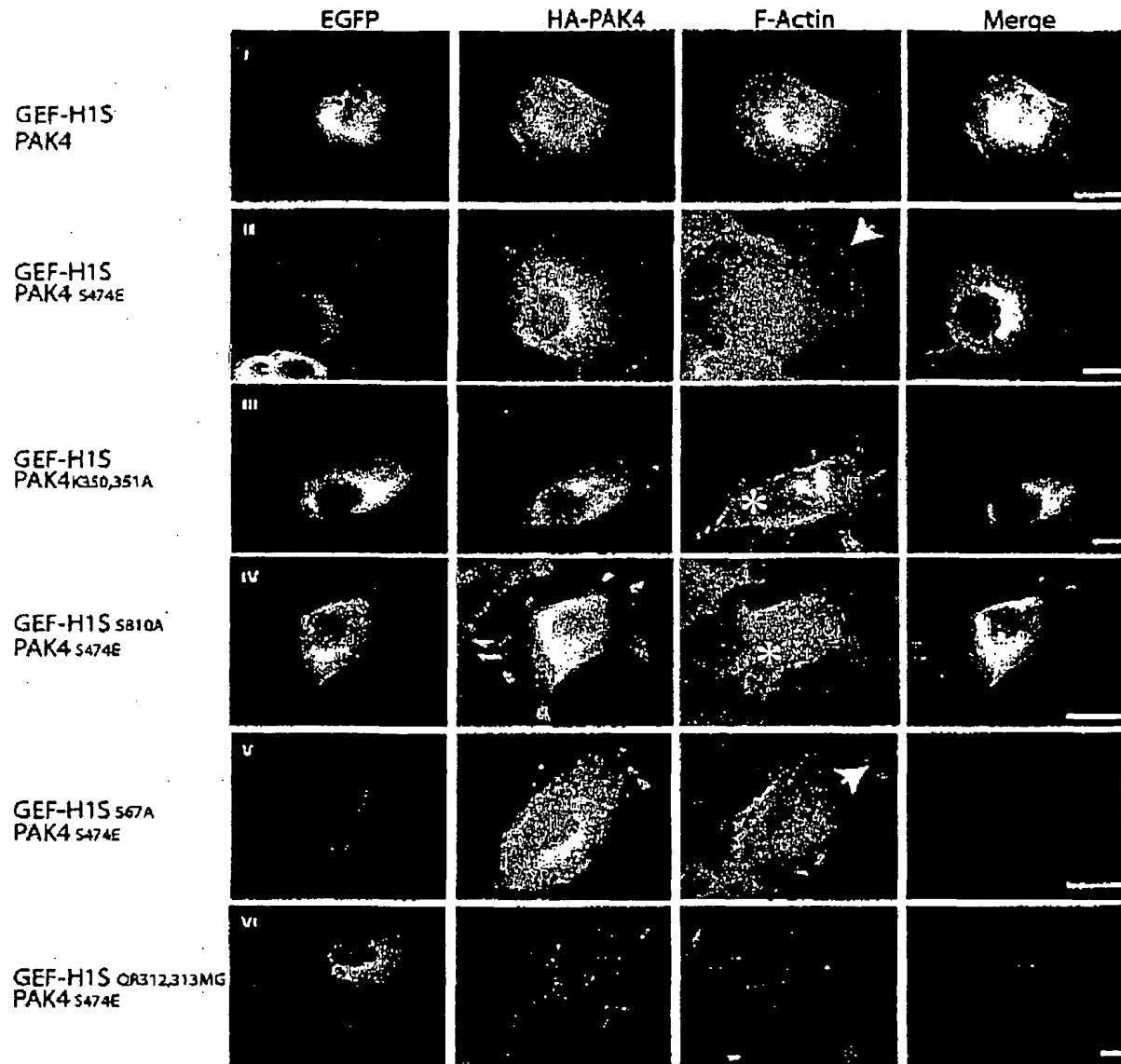


Fig. 5b. PAK4 regulates lamellipodia formation through phosphorylation of S810.

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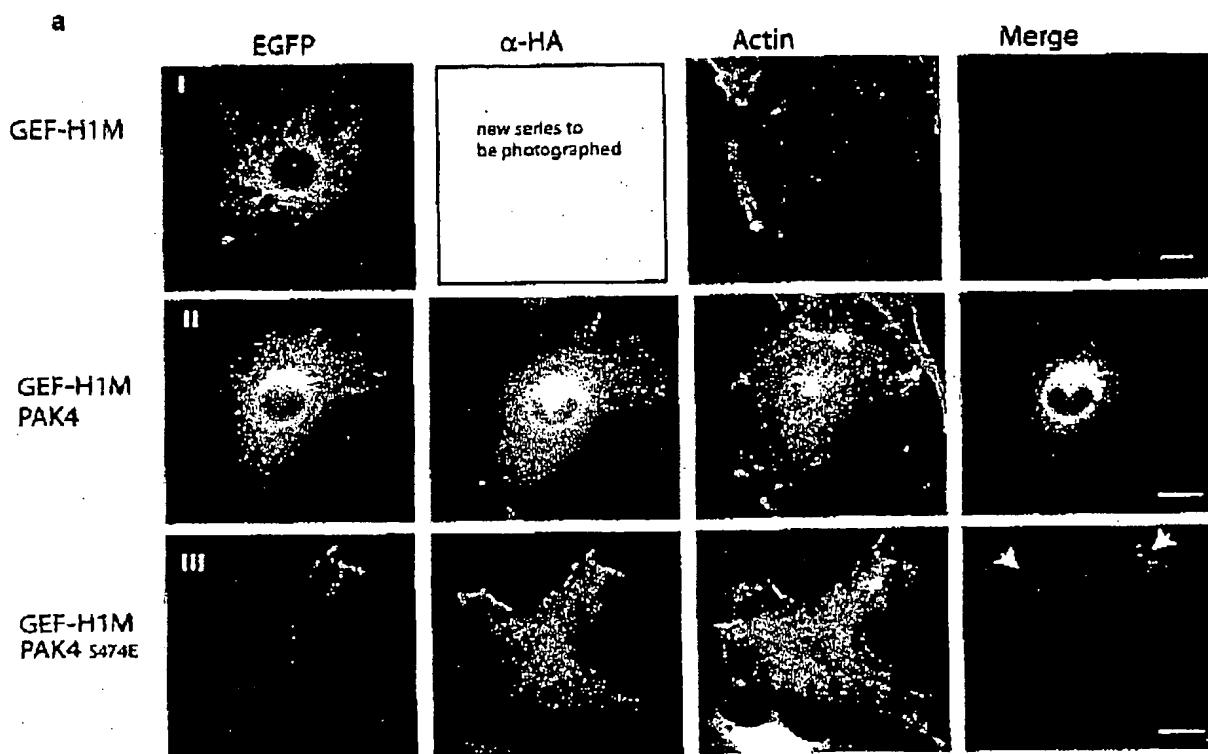


Fig 6a.PAK4 signalling through GEF-H1M to the actin cytoskeleton.

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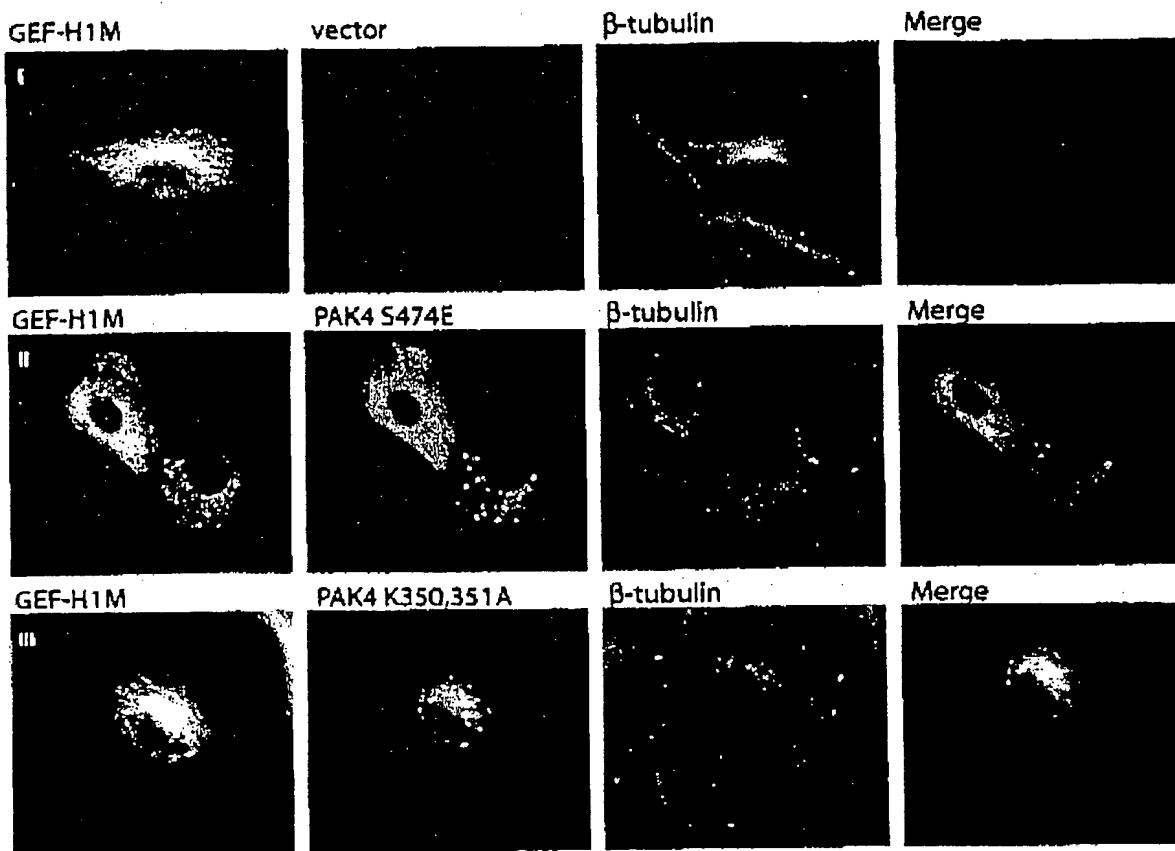


Fig 6b. PAK4 activity destabilizes GEF-H1M association with MTs.

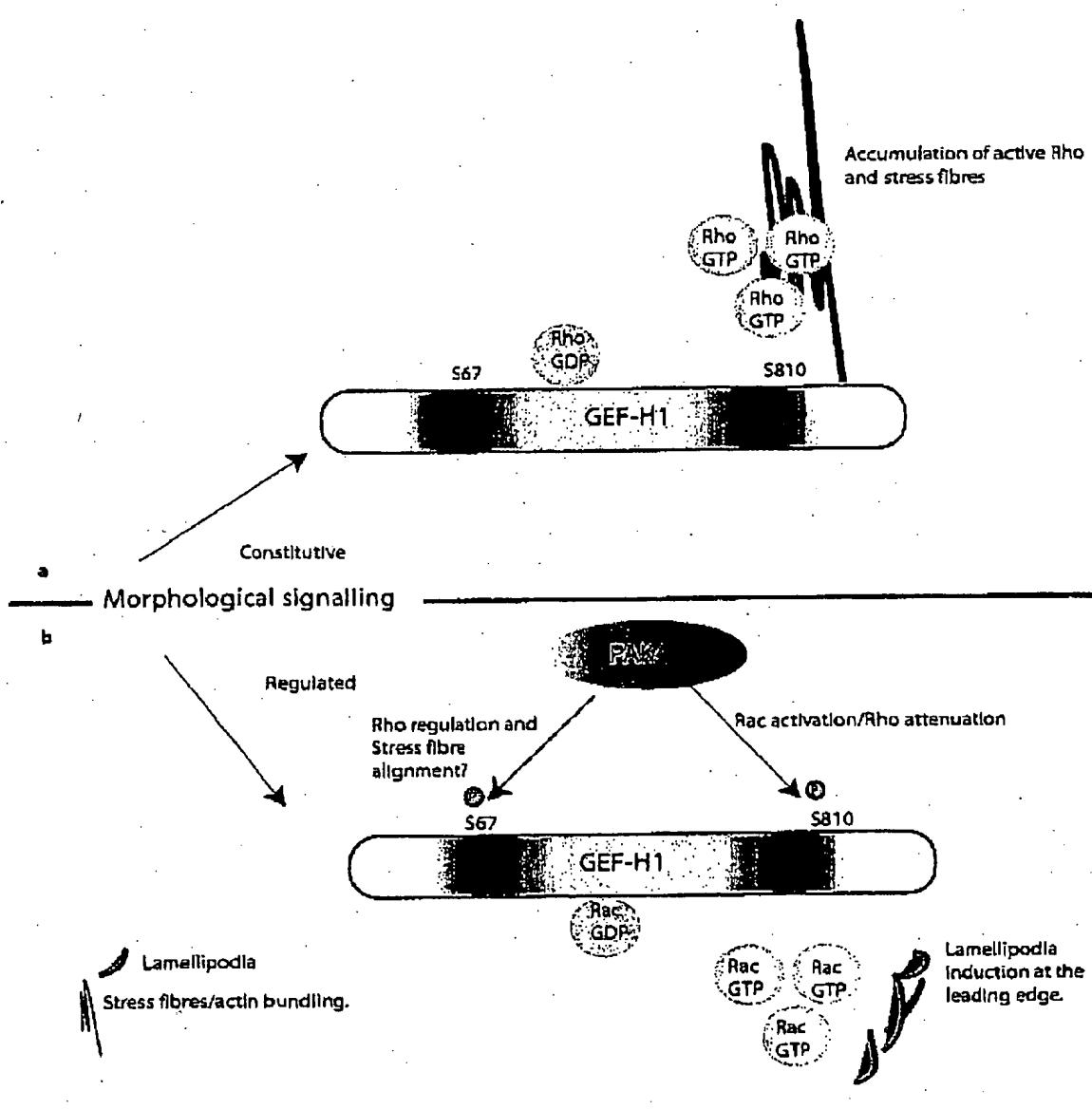


Fig 7. Model for reciprocal regulation of Rac and Rho *in vivo*.

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Phosphorylation scores GEF-H1 proteins and peptides.

FIGURE 8

a.

	PEPTIDE	PHOSPHORYLATION
681	RRKSLVGTPYWMAP	PAK4 act loop +++++
1008	RRRSLPAGDALYLSFNPP	GEFH1 (807-824) +++++
1009	RRRSLPAGDALYLSFNPP	GEFH1 (807-824) -
1010	RRRSLPAGDALYLSFNPP	GEFH1 (807-824) +++++
1412	RQSILLGSRRGRS SLSLAK	GEFH1 (55-72) -
1413	RQSILLGSRRGRSS SLSLAK	GEFH1 (55-72) -
1414	RQSILLGSRRGRS SLSLAK	GEFH1 (55-72) +++++

b.

POLYPEPTIDE	PHOSPHORYLATION
1-386	++++
386-921	++
763-921	++++
51-921 <sub>s810A</sub>	++++
386-921 <sub>s810A</sub>	-
807-824	++++
55-72	++

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FIGURE 9 GEF-H1 regulatory regions are conserved with Cdc24

- PR-RXSLXG.. Consensus  
-----PFOLAYCSEVESE--ROSEELSONQEEELKSNCANRD Cdc24 (62-99)  
SLRSKTTIRERPSEAIYPSDSFROSILAGSRRGRSSESLAKSVSTTN GEF-H1M and S

- PR-RXSLXG.. Consensus  
-----QH--DMSAFSSHMKRVSDVLPK-RRTTSSPESIEKSEN Cdc24 (712-752)  
GMPPLPAPWARRPWB-----PR-RXSLPAG-DALYLSFNPPQPSRGTD GEF-H1M and S

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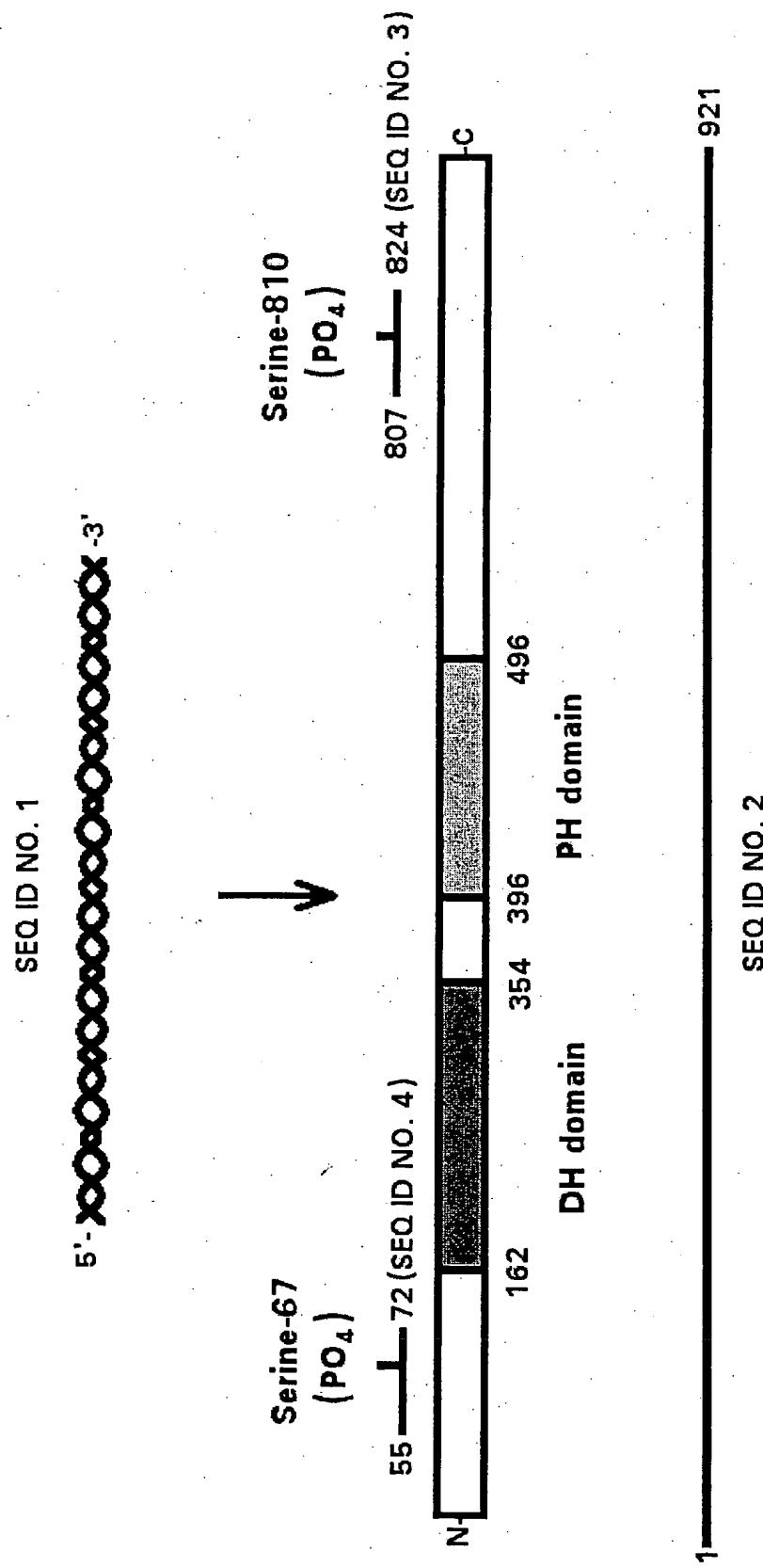


Figure 10